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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,251	02/19/2004	Richard E. Pingree Jr.	ATI-0022	2250

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EXAMINER	
AKRAM, IMRAN	
ART UNIT	**PAPER NUMBER**
1797	

MAIL DATE	DELIVERY MODE
11/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/708,251	PINGREE ET AL.	
	Examiner	Art Unit	
	Imran Akram	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *1-13 and 27-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/10/07 have been fully considered but they are not persuasive. Applicant is reminded that it is the invention as claimed that is being examined.

2. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the solid material being detected) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

3. In response to applicant's arguments, the recitation "A material detection system" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

4. In response to applicant's argument that reference does not disclose matching impedance value to an amount of solid material, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention

and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 14 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Turner (US 5,939,886).

3. Regarding claim 14, Turner discloses a material detection system, comprising: a flow path configured to contain a medium of interest in which solid material is to be detected; an electromagnetic energy source for exciting said medium of interest; and an impedance measuring device for measuring an impedance value of an electromagnetic circuit (column 3, lines 21-40).

4. Regarding claim 16, Turner discloses an electromagnetic energy source configured to excite said medium of interest into plasma (column 3, lines 21-40).

5. Regarding claim 17, Turner discloses the material detection system of claim 14, wherein said impedance measuring device is configured to determine an impedance magnitude value and an impedance phase value (column 9, lines 53-59).

6. Regarding claim 18, Turner discloses a mechanism for determining variations of said impedance magnitude and phase values over time (column 5, lines 61-66).

7. Claims 19, 22, 23, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Tretola (US 4,207,137).

8. Regarding claim 19, Tretola discloses a plasma based semiconductor material removal system, comprising: an upstream electromagnetic energy source **19** configured to cause excitation of an input gas into a plasma so as to produce a reactive species (column 1, lines 20-31); a mechanism for uniformly conveying said reactive species to a surface of a workpiece having photoresist material formed thereupon (column 1, lines 20-31); a mechanism for heating said workpiece so as to enhance the reaction rate of said photoresist material and said reactive species (column 3, lines 40-50); a downstream electromagnetic energy source **14** for exciting an exhaust gas downstream of said workpiece; and an impedance measuring device **17** for measuring an impedance value of an electromagnetic circuit, said electromagnetic circuit including said exhaust gas therein.

9. Regarding claims 22 and 23, Tretola discloses a mechanism for determining variations of said impedance magnitude and phase values over time (column 4, lines 27-48).

10. Regarding claim 26, Tretola discloses an impedance-measuring device configured for facilitating endpoint detection of removal of said photoresist material (see abstract).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claim 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Turner.

15. Turner discloses a radio frequency circuit, but not a microwave circuit. Turner does, however, disclose the use of microwave circuits in the art (column 1, lines 21 to

30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a microwave circuit in conjunction with the RF circuit as both are well known and differ only by frequency. Turner discloses the use of multiple circuits and either could be made microwave instead of RF depending on the frequency desired.

16. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tretola as applied to claim 19 above, and further in view of Turner.

17. Regarding claims 20 and 21, Tretola discloses a radio frequency circuit, but not a microwave circuit. Turner does, however, disclose the use of microwave circuits in the art (column 1, lines 21 to 30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a microwave circuit in conjunction with the RF circuit as both are well known and differ only by frequency. Turner discloses the use of multiple circuits and either could be made microwave instead of RF depending on the frequency desired.

18. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tretola.

19. Tretola discloses the use of a power level of 100 watts (column 7, lines 25-29). Tretola does not, however, disclose the use of a power level of 300 watts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to increase the power level of the energy source if more power was necessary to excite the particular gas being used.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Imran Akram whose telephone number is 571-270-3241. The examiner can normally be reached on 11-7 from Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

IA

Walter D. Griffin

WALTER D. GRIFFIN
SUPERVISORY PATENT EXAMINER